

CLAIMS

We claim:

1. A seal, comprising:
a plurality of blades extending radially from a rotatable body and generally forming at least one row of blades;
a plurality of blades extending radially from a stationary body towards the rotatable body and generally forming at least one row of blades; and
wherein the plurality of blades extending radially from a stationary body are positioned proximate to the plurality of blades extending from the rotatable body and are nonparallel with the plurality of blades extending from the rotatable body.
2. The seal of claim 1, wherein the plurality of blades extending radially from the stationary body are generally orthogonal to the plurality of blades extending from the rotatable body.
3. The seal of claim 1, wherein the plurality of blades extending radially from the rotatable body are aligned at an angle of between about 1 degree and about 89 degrees relative to a rotational axis of the rotatable body.
4. The seal of claim 3, wherein the plurality of blades extending radially from the rotatable body are aligned at an angle of about 60 degrees relative to a rotational axis of the rotatable body.
5. The seal of claim 1, wherein the plurality of blades extending radially from the stationary body are aligned at an angle of between about 1 degree and about 89 degrees relative to a rotational axis of the rotatable body.
6. The seal of claim 5, wherein the plurality of blades extending radially from the stationary body are aligned at an angle of about 60 degrees relative to a rotational axis of the rotatable body.

7. The seal of claim 1, wherein the plurality of blades extending radially from the rotatable body forms a plurality of rows of blades.

8. The seal of claim 1, wherein the plurality of blades extending radially from the stationary body forms a plurality of rows of blades.

9. The seal of claim 1, wherein the plurality of blades extending radially from the rotatable body extend to within about 0.6 millimeters radially from the stationary body.

10. The seal of claim 1, wherein the plurality of blades extending radially from the stationary body extend to within about 0.6 millimeters radially from the rotatable body.

11. A seal, comprising:

a plurality of blades extending radially from a rotatable body and positioned generally nonparallel to a rotational axis of the rotatable body, wherein the plurality of blades generally form at least one row of blades;

a plurality of blades extending radially from a stationary body towards the rotatable body and positioned nonparallel to the rotational axis of the rotatable body, wherein the plurality of blades form at least one row of blades; and

wherein the plurality of blades extending radially from a stationary body are positioned proximate to the plurality of blades extending from the rotatable body and are nonparallel with the plurality of blades extending from the rotatable body.

12. The seal of claim 11, wherein the plurality of blades extending radially from the stationary body are generally orthogonal to the plurality of blades extending from the rotatable body.

13. The seal of claim 11, wherein the plurality of blades extending radially from the rotatable body are aligned at an angle of between about 1 degree and about 89 degrees relative to a rotational axis of the rotatable body.

14. The seal of claim 13, wherein the plurality of blades extending radially from the rotatable body are aligned at an angle of about 60 degrees relative to a rotational axis of the rotatable body.

15. The seal of claim 11, wherein the plurality of blades extending radially from the stationary body are aligned at an angle of between about 1 degree and about 89 degrees relative to a rotational axis of the rotatable body.

16. The seal of claim 15, wherein the plurality of blades extending radially from the stationary body are aligned at an angle of about 60 degrees relative to a rotational axis of the rotatable body.

17. The seal of claim 11, wherein the plurality of blades extending radially from the rotatable body forms a plurality of rows of blades.

18. The seal of claim 11, wherein the plurality of blades extending radially from the stationary body forms a plurality of rows of blades.

19. The seal of claim 11, wherein the plurality of blades extending radially from the rotatable body extend to within about 0.6 millimeters radially from the stationary body.

20. The seal of claim 11, wherein the plurality of blades extending radially from the stationary body extend to within about 0.6 millimeters radially from the rotatable body.